

Claims

1. A structure used as a covering, having an aseismatic function, characterised in that it comprises a plurality of uprights (701, 701) connected to horizontal support beams (101', 700) supporting at least one telescopic covering or telescopic roof, the latter being formed by several sections that can be inserted into each other in telescopic-like fashion when the telescopic roof is opened;
5 said structure being provided with vibration preventing means or aseismatic means (306; 307; 319) that are present in the interconnection regions between said uprights (701, 701) and the support beams (101', 700), on the one hand, and at the base of the uprights (701, 701), on the other, so as to allow an oscillation or rocking of the
10 structure in all directions.
2. An aseismatic structure according to claim 1, characterised in that it also has an anti-wind, or wind-protection function, and in that it includes for this purpose anti-wind means of the following kind:
15 butterfly valves (708) consisting of rotatable structurals which open and close respective holes or apertures (11) provided on the telescopic roof; rotation means (310, 311) which are inserted between a lateral edge of a telescopic roof and respective lateral structurals (702; 703, 704) so as to allow the transversal rolling movement of the structure in the eventuality of a strong wind, in such a way
20 as to insure a certain degree of yielding of the covering in response to the gusts of the wind.
3. A structure according to claim 2, characterised in that some (703, 704) of said lateral structurals (702, 703, 704) are movable and are received inside the support beams (700) and form trolleys apt to support and displace said sections of the telescopic roof, while other lateral structurals (702) are stationary and extend
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along the whole length of the structure.

4. An aseismatic structure according to anyone of the preceding claims, which is characterised in that it includes drainage and guiding means for draining and guiding the water from the telescopic roof to the ground, said means including:
 - 5 longitudinal channels formed inside the support beams (700) which for this purpose are upwardly open and allow the downflow of water from the telescopic roof to the uprights (701, 701);
 - longitudinal channels formed inside the uprights (701, 701), leading to containers formed by plates (1, 2) located at the foot or base of each upright (701, 701) where some (307) of said aseismatic means (306; 307; 319) are also located.
5. An aseismatic structure according to anyone of the preceding claims, characterised in that it comprises stationary arcuate beams (22) which contain like a cage the whole upper telescopic roof and which preferably are fixed to said lateral outermost structurals (702) and/or to the support beams (700); wherein channels are provided within said stationary arcuate beams (22) for feeding pressurised water to be sprayed on the telescopic roof in order to clean it from debris/dirt, dust or the like.
- 20 6. An aseismatic structure according to anyone of the preceding claims, including means (329, 330, 331) for restricting the angle of absolute oscillation of the uprights relative to the base plane defined by the telescopic roofs.
7. An aseismatic structure according to anyone of the preceding claims, characterised in that said aseismatic means located at the feet or bases of the uprights (701, 701) are formed by shock absorbers (307) including a pair of arcuate leaf springs of music wire, that is, of high-quality high-carbon steel, combined with a shaped body of EPDM and with helical springs interposed between said arcuate leaf springs, and

including also a plane base of stainless steel; said shock absorbers (307) being evenly distributed at the foot of each upright in order to allow oscillations of the respective upright (701, 701) in all directions.

5 8. An aseismatic structure according to anyone of the preceding claims, wherein the aseismatic means used at the branching or interconnection points between the uprights (701, 701) and the support beams (101', 700) are of two kinds:
a first kind (306), consisting of three pieces of die-cast aluminium forming together a triangle and an arc of a circle of 90° or "quadrant", and with at least one internal
10 spring (10) allowing the compression and expansion of the two external movable pieces of the aseismatic means (306);
a second kind (319), which is formed of a flat plate of aluminium surmounted by a double capital with an articulation joint, which at the same time acts as water collector and drainage means to direct the water towards the inner channels or
15 passages of the uprights (701, 701).

9. An aseismatic structure according to anyone of the preceding claims, characterised in that on the lower arcuate side (101") of said stationary arcuate beams (22) there are provided gaskets/seals (305) which perform a scraping action on the surface of
20 the telescopic roof in order to clean it from dirt/debris, or the like, during the movement of the telescopic roof.

10. An aseismatic structure according to anyone of the preceding claims, characterised in that the lateral support beams (700) receive the following elements
25 inside them for insuring space optimisation and improving the aspect/elegance of the structure:
- timing belts used for driving the movable trolleys/structurals (703, 704) associated with each telescopic roof;

- gearwheels (313), for directly transmitting the motion transmitted by the driving shaft (315, 316),
transmission pulleys (313P) and belt tensioners (317).

5 11. An aseismatic structure according to anyone of the preceding claims, wherein at least one of the telescopic roofs is made of transparent material.

12. An aseismatic structure according to anyone of the preceding claims 1 to 10, wherein at least one telescopic roof is not transparent and includes layers of different properties in order to:

a) resist to the weather/atmospheric agents (outermost layer);
b) obtain a soundproof internal space with respect to the outside of the structure, even in the eventuality of rain or hail;
c) insulate the internal space of the structure from outside temperatures;
15 d) refine the style, that is improve the elegance of the structure (innermost layer).

13. An aseismatic structure according to anyone of the preceding claims, characterised in that it is preferably formed, for the most part of it, of light metal, for instance aluminium, and its metallic structurals have isolated inner channels for the 20 passage of electric cables or the like (900), these structurals being externally provided with slots or grooves (17, 24) for mounting the motors used to drive the telescopic roof, or for reinforcing a first structural by means of I-beam-shaped elements (320) longitudinally connectable to a second structural, or for other purposes.